

IN THE CLAIMS:

1. (Currently Amended) A submerged evaporator, comprising ~~contained in~~ a substantially circular cylindrical, horizontally oriented casing and including at least one integrated plate heat exchanger, where the integrated plate heat exchanger has at least one inlet connection and at least one outlet connection for a secondary refrigerant, where the plate heat exchanger is ~~disposed~~ confined within and substantially fills the bottom half ~~[[end]]~~ of the casing, where a primary refrigerant is able to flow around the plate heat exchanger and a secondary refrigerant is able to flow through the plate heat exchanger, and where the uppermost part of the casing is used as a liquid separator, wherein the integrated plate heat exchanger is integrated with the evaporator and made with ~~an outer~~ contour on an underside thereof that is substantially follows matched to the lower contour of a facing surface of the bottom end of the casing in proximity thereto and has a contour on a top side thereof that follows the liquid level of the primary refrigerant.

2. (Previously Presented) The submerged evaporator according to claim 1, wherein the longitudinal sides of the plate heat exchanger are closed for inflow or outflow of the primary refrigerant between the plates of the plate heat exchanger, and wherein the bottom of the plate heat exchanger there is provided at least one opening through which the primary refrigerant flows in between the plates of the plate heat exchanger.

3. (Previously Presented) The submerged evaporator according to claim 1, wherein longitudinal guide plates extending from an area in the vicinity of the top side of the plate heat exchanger and downwards against the bottom end of the casing are provided in longitudinal gaps appearing between plate heat exchanger and casing, where the downwardly extension of the guide plates has a magnitude so that a longitudinal area at the bottom of the plate heat exchanger is held free from guide plates, where the primary refrigerant is able to flow in between the plates of the plate heat exchanger.

4. (Previously Presented) The submerged evaporator according to claim 1, wherein the plates of the plate heat exchanger are embossed with a pattern of guide grooves pointing

towards the inner periphery of the casing at the upper edge of the plates with an angle between 0° and 90° in relation to level, and preferably with an angle between 20° and 80° .

5. (Previously Presented) The submerged evaporator according to claim 1, wherein including a condenser shaped as a second plate heat exchanger, which is mounted in the “dry” part of the casing, and which is separated from the evaporator section by a plate.

6. (Previously Presented) The submerged evaporator according to claim 1, wherein including a demister which is mounted in the casing in immediate vicinity of the outlet connection for evaporated refrigerant.

7. (Previously Presented) The submerged evaporator according to claim 1, wherein being adapted in order that secondary refrigerant is able to flow to and from the plate heat exchanger via one inlet connection and one outlet connection, respectively, at the upper edge of the plates.

8. (Previously Presented) The submerged evaporator according to claim 1, wherein being adapted in order that secondary refrigerant is able to flow to and from the plate heat exchanger via one connection at the bottom of the plates and one connection at the upper edge of the plates, respectively.

9. (Previously Presented) The submerged evaporator according to claim 1, wherein being adapted in order that secondary refrigerant is able to flow to and from the plate heat exchanger via one connection at the bottom of the plates and two connections at the upper edge of the plates, respectively.

10. (Previously Presented) The submerged evaporator according to claim 1, wherein the casing contains a suction manifold disposed in the “dry” part of the casing and extending in longitudinal direction of the evaporator with a length substantially corresponding to the length of the plate heat exchanger.

11. (Currently Amended) The submerged evaporator according to claim 1, wherein ~~the casing is cylindrical and~~ the heat exchanger is partially cylindric.

12. (Previously Presented) The submerged evaporator according to claim 1, wherein the heat exchanger substantially entirely fills the submerged part of the casing.